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Keeping Calculated Fields In your Database

AppleWorks lets you insert up to three calculated categories in a database report. This means that you can add three new categories to your report that did not exist before; the information in these categories is derived from calculations of other categories.

If you are familiar with inserting and using these calculated categories, you'll probably be familiar with their limitations. First, they are available only in tables-style reports. Second, they have limited mathematical capabilities. Third (and the topic we're discussing in this article), they cannot be saved as part of the database from which they were created -- they apply only to reports and only when printing to the screen or to a printer. (We'll discuss the other two problems in future articles.)

So begins the task...how to include the calculations in each record of your database. If you're experienced with AppleWorks data transfer, you might be thinking, "just print the tables-style report, including calculations, to disk as an ASCII file and read it back into the database."

Or maybe you've tried that already, and discovered that calculated categories disappear when printed to ASCII or to a disk printer -- they simply don't get included unless you're printing to the screen or to a printer.

Another thought is to print the file, including calculated categories, to the clipboard using Open Apple - P with the *To clipboard* option and then move it to the word processor before going back to the database. This method *does* give you the calculated categories in the word processor, but in a format that is just not practical for moving back to a database file.

There is only one method we've found satisfactory for this task and, since it involves mail merge, it can be done only with version 2.0 of AppleWorks. We'll cover each step in detail, but here's the technique in brief: First, print your tables-style report, including calculated categories, to the clipboard using the *To clipboard for mail merge* option. Next, merge all the fields into a word processor file and save the file in ASCII format. Finally, read the ASCII file into a new database file using an appropriate number of categories per record.

Step One

To begin, set up a tables-style report including the calculated categories that you desire in the database; each record will produce calculations based on other information in the record. The end result is to get those calculations to appear in the database itself -- as part of the data in the records. Your report might look like the one in Figure 1. Keep all categories in this report.

Now print the report using Open Apple - P and the *To the clipboard (for Mail Merge)* option. Soon the report will be on the clipboard ready for mail merge.

Step Two

Begin a new word processor file from scratch. Use Open Apple-O with the MM option (version 2.0) to insert each merged category name into the document. Make sure that each category appears on a separate line. (You might insert them all at once without leaving the options and then go back and place carriage returns between them. This way, you will avoid having to repeatedly enter and exit the options.) The report should look something like Figure 2.

AppleWorks will ask you if you want to omit a line when all entries on the line are blank. Answer each with a NO.

Step Three

The next step is to adjust the page length of your word processor document so that your categories will fill one page exactly. In other words, you need to reduce the page length so that the categories just fit into one page. To do this, use the table shown in Figure 3 to match the appropriate page length setting to the number of lines you have in your document.

Notice that each line adds .2 to the measurement except for every fifth line.

Make sure that there is no space at the top of the document and that the document contains no margins, headers, footers, or other formats -- other than the page length setting.

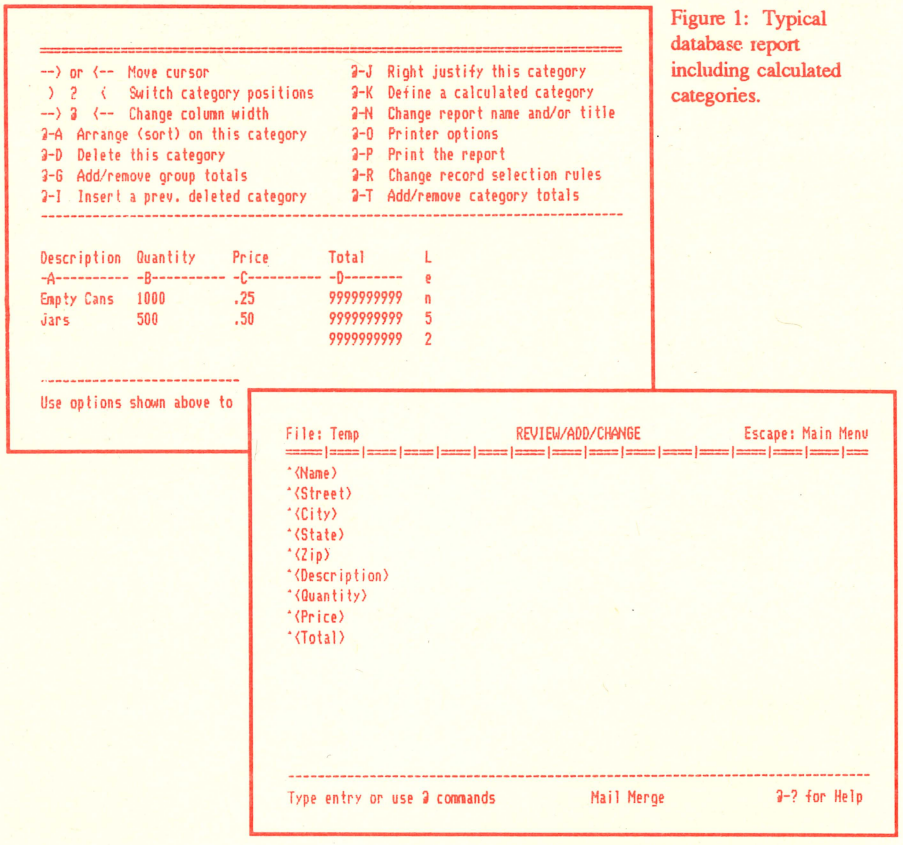

--) or (-- Move cursor
) ? (Switch category positions
--) ? (-- Change column width
?-A Arrange (sort) on this category
?-D Delete this category
?-G Add/remove group totals
?-I Insert a prev. deleted category
?-J Right justify this category
?-K Define a calculated category
?-N Change report name and/or title
?-O Printer options
?-P Print the report
?-R Change record selection rules
?-T Add/remove category totals
Description Quantity Price Total L
-A- -B- -C- -D- e
Empty Cans 1000 .25 9999999999 n
Jars 500 .50 9999999999 5
9999999999 2
Use options shown above to
File: Temp REVIEW/ADD/CHANGE Escape: Main Menu
*(Name)
*(Street)
*(City)
*(State)
*(Zip)
*(Description)
*(Quantity)
*(Price)
*(Total)
Type entry or use ? commands Mail Merge ?-? for Help

Figure 1: Typical database report including calculated categories.

Figure 2: Word processor document after merging fields are in place.

Number of lines	PL Setting
6	1
7	1.2
8	1.4
9	1.6
10	1.8
11	1.9
12	2
13	2.2
14	2.4
15	2.6
16	2.8
17	2.9
18	3
19	3.2
20	3.4

Figure 3: Table of page length settings for various lines in document.

Now print this word processor document to an ASCII file on disk using Open Apple - P with the *To a text (ASCII) file on disk* option. AppleWorks will ask if you want to merge database items with this document or if you want to print the document without merging. Select the first option to create a complete, merged file on the disk.

Enter a pathname for this file. You can delete the file after the transfer is complete; if you have a RAM disk active, printing to /RAM/ASCII is a quick and painless choice.

Step Four

The next step just about wraps it all up. Begin a new database file using the *From a text (ASCII) file* option and select the text file you saved in the previous step.

AppleWorks will ask for the number of categories per record. Answer this question with the number of lines that were in your word processor document. This will be the same number of categories that were in the original database plus up to three extras for the calculated categories.

The new database will contain the exact information contained in the old database in addition to the calculated categories. You'll have to rename the categories using the Open Apple - N command and possibly rearrange them with Open Apple - L.

Step Five

As you add records to the new database, they will not, of course, contain the calculations in the categories that were added during this process. You'll have to periodically repeat this process to update the calculations.

When doing the second and future repetitions of this process on the same database, you won't

have to end up with a new database. Instead, build the tables-style report exacly as you did in the first database. Delete the categories added from the first conversion process and re-create the calculated categories in the report format using the Open Apple - K command. This will serve to re-calculate the amounts for all records in the database. Now follow the steps as you did the first time.

When you get to step three, don't bother renaming the categories in the new database because you'll be moving the data back into the original database. Go back to the database that created the report and delete all the records out of the file. You can do this quickly in the multiple record view with the Open Apple-D command. Now use the Open Apple - C command to copy all the records from the new database back to the empty database from which you started. This process will not only keep you from having to rename the database categories, but it will save your report formats.

Another trick for repeating this process is to keep the word processor document that you created with the merge fields. You can reuse it each time. Plus, a macro will make this work more automatic.

Quote Unquote

Regarding Apple's management:

"From the home office, it looks as if Apple is more worried about hiring MBAs than making computers. I think that Apple has more Vice Presidents than Apple II hardware engineers."

ETC Editor
The Byte Buyer of San Diego

Annuities Spreadsheet

by John Slack

Many people are considering using one of the most popular forms of investment saving for retirement: the annuity. Annuity calculations are divided into three phases: the accumulation phase when deposits are made, the holding phase when deposits have stopped but the accumulated money draws interest, and the payout phase when the money is withdrawn at a regular rate until the principal and interest are gone.

In issue 2-8 of the Main Menu we presented a template that calculates the amount of the payout when the size of the deposit is known. In this article, we present a template that calculates the size of the deposit when the payout size is known. You can use the spreadsheet variables to play "what if" with the interest rates, times, and amounts for all three phases of the annuity.

To begin, start a new spreadsheet file with the name Annuity.PHA. Now enter the following labels into the spreadsheet beginning with cell B5 through cell B36:

```
B5  PAYOUT PHASE
B6  ------------------------
B7  Amount of each payment
B8  Number of payments per year
B9  Nominal interest rate, %
B10 Number of years
B11 Number of months
B12
B13 Decimal interest (calc)
B14 Decimal year (calc)
B15
B16 Minimum investment (calc)
B17
B18 HOLDING PHASE
B19 ------------------------
B20 Future value (calc)
B21 Compounding periods/year
B22 Number of years
B23 Number of months
B24 Nominal interest rate, %
B25 Initial Investment (calc)
B26
B27 ACCUMULATION PHASE
B28 ------------------------------------
B29 Total value after deposits (calc)
B30 Nominal interest rate, %
B31 Number of deposits/year
B32 Number of years
B33 Number of months
B34
B35 Regular deposits (calc)
B36
```

Now type the label "=" in cell E7 by pressing " then = and Return. With the cursor still on cell E7, we'll center the information by pressing Open Apple - L then the *Entry* option, then the *Label format* option, then the *Center* option. Now we'll copy the label down column E to cell E36 using Open Apple - C and the *Within document* option. You can go back and blank out cells E15, E17, E18, etc. The screen should look like Figure 1.

Formulas

The formulas used in this template are very complex and must be entered into the proper cells. Following are the cells and the formulas to enter for each:

```
F13  +F9/100
F14  (12*F10+F11)/12
F16  (F7*F8/F13)*(1-
     (1/((1+(F13/F8))^(F8*F14
     ))))
F20  +F16
F26  +F20/(((F24/F21/100)+1)^
     (F21*((12*F22+F23)/12)))
F30  +F26
F36  +F30*((F31/F32/100)/((((
     F31/F32/100)+1)^(F32*(12*
     F33+F34/12)))-1))
```

ERROR messages will appear as you enter the formulas; when you enter data they will go away. If desired, format all cells containing dollar amounts so that they display only two decimal places.

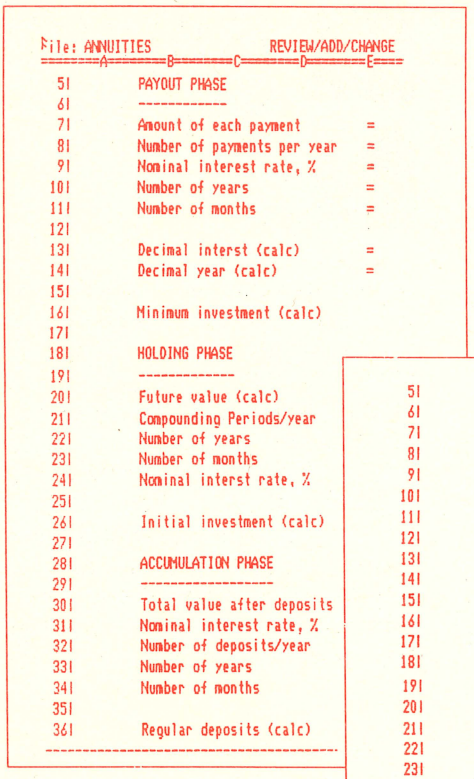
Entering Data

To enter the data, treat each phase separately, indicating the interest rate and number of installments for each. Try the example shown in Figure 2 then alter the numbers and recalculate with Open Apple - K.

You can play "what if" with this spreadsheet by copying additional sets of the formulas in columns G, H, I and so on. Then enter new values into the appropriate cells in these columns.

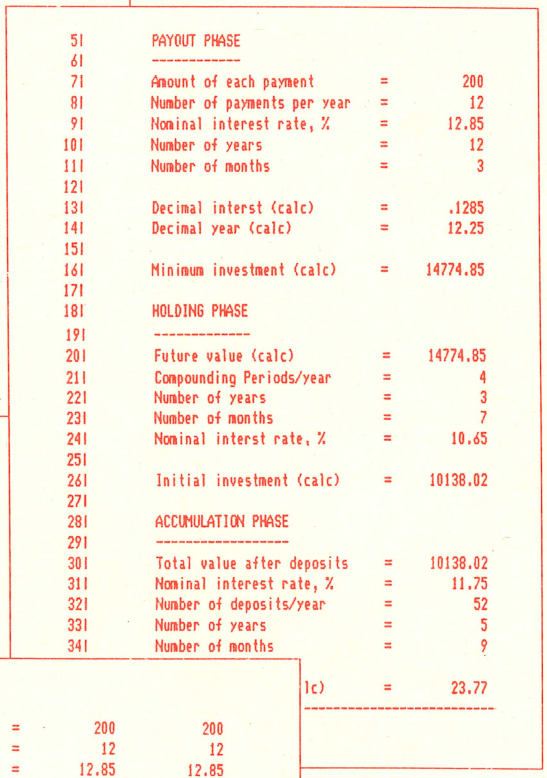
Place the cursor on cell F7 and press Open Apple - C with the *Within document* option. Highlight through cell F36 as the source and press Return. Now move to cell G7 and press Return again to specify the destination. When AppleWorks asks *Relative* or *No change* concerning the cell references, answer each with Relative.

Figure 3 shows the spreadsheet comparing two different sets of information. Add as many sets as you like for comparison.



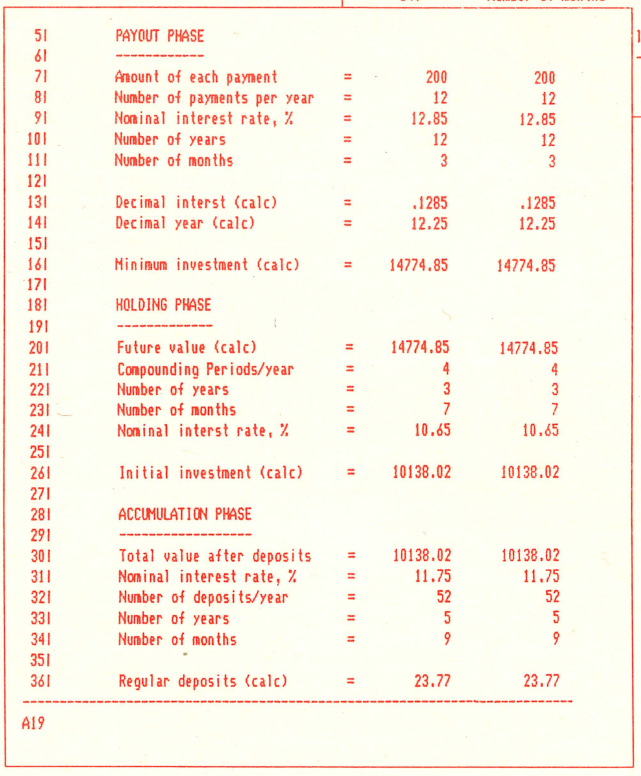
```
File: ANNUITIES                    REVIEW/ADD/CHANGE
      A        B        C        D        E
 51       PAYOUT PHASE
 61       ------------
 71       Amount of each payment          =
 81       Number of payments per year     =
 91       Nominal interest rate, %        =
101       Number of years                 =
111       Number of months                =
121
131       Decimal interst (calc)          =
141       Decimal year (calc)             =
151
161       Minimum investment (calc)
171
181       HOLDING PHASE
191       -------------
201       Future value (calc)
211       Compounding Periods/year
221       Number of years
231       Number of months
241       Nominal interst rate, %
251
261       Initial investment (calc)
271
281       ACCUMULATION PHASE
291       ------------------
301       Total value after deposits
311       Nominal interest rate, %
321       Number of deposits/year
331       Number of years
341       Number of months
351
361       Regular deposits (calc)
```

Figure 1: Enter these labels into the spreadsheet to begin.



```
 51       PAYOUT PHASE
 61       ------------
 71       Amount of each payment          =        200
 81       Number of payments per year     =         12
 91       Nominal interest rate, %        =      12.85
101       Number of years                 =         12
111       Number of months                =          3
121
131       Decimal interst (calc)          =      .1285
141       Decimal year (calc)             =      12.25
151
161       Minimum investment (calc)       =   14774.85
171
181       HOLDING PHASE
191       -------------
201       Future value (calc)             =   14774.85
211       Compounding Periods/year        =          4
221       Number of years                 =          3
231       Number of months                =          7
241       Nominal interst rate, %         =      10.65
251
261       Initial investment (calc)       =   10138.02
271
281       ACCUMULATION PHASE
291       ------------------
301       Total value after deposits      =   10138.02
311       Nominal interest rate, %        =      11.75
321       Number of deposits/year         =         52
331       Number of years                 =          5
341       Number of months                =          9
                                                  lc)  =      23.77
```

Figure 2: The Annuities spreadsheet after formulas have been entered.



```
 51       PAYOUT PHASE
 61       ------------
 71       Amount of each payment          =        200        200
 81       Number of payments per year     =         12         12
 91       Nominal interest rate, %        =      12.85      12.85
101       Number of years                 =         12         12
111       Number of months                =          3          3
121
131       Decimal interst (calc)          =      .1285      .1285
141       Decimal year (calc)             =      12.25      12.25
151
161       Minimum investment (calc)       =   14774.85   14774.85
171
181       HOLDING PHASE
191       -------------
201       Future value (calc)             =   14774.85   14774.85
211       Compounding Periods/year        =          4          4
221       Number of years                 =          3          3
231       Number of months                =          7          7
241       Nominal interst rate, %         =      10.65      10.65
251
261       Initial investment (calc)       =   10138.02   10138.02
271
281       ACCUMULATION PHASE
291       ------------------
301       Total value after deposits      =   10138.02   10138.02
311       Nominal interest rate, %        =      11.75      11.75
321       Number of deposits/year         =         52         52
331       Number of years                 =          5          5
341       Number of months                =          9          9
351
361       Regular deposits (calc)         =      23.77      23.77
A19
```

Figure 3: Comparing various scenarios using multiple columns of data and formulas.

Random Tip

When copying large, complex formulas into the spreadsheet, begin by entering a number (like the number 5) and pressing Return. Now enter the large formula by pressing Open Apple-U, backspacing to delete the number you just entered, and typing the formula.

What you're doing by this is entering the formula in Edit mode. In Edit mode, all your arrow keys work inside the formula so you can back up and re-type or insert information without erasing what's already there. The arrow keys work differently when you're not editing the contents of a cell.

Interview: Bob Lissner

by Elizabeth Gebhardt

Feature

Bob Lissner is the developer of AppleWorks, the Apple II product that has become one of the top three best-selling software programs ever. This interview was conducted over the phone with Bob from his home in the Lake Tahoe area of California.

How did you first get involved with computers?
When I was an undergraduate at Stanford in 1962, I took a math class that used BALGOL. I took the class because it sounded interesting, but it didn't work out too well because I just couldn't do the mathematics that they required. I think one of the problems with teaching people about computers at that time was the universities' insistence on a mathematical emphasis.

Since your first interaction with computers was not what we would call a success, what was your first positive experience?
Later, I met a Stanford administrator who had an IBM 1401 4k system. He gave me a job to write some accounting programs. The 1401 was physically a big machine; probably about the size of six desks. About six months later, I discovered an 8k 1401 in the basement of the Business School and took it over. With over 8k of memory, I really thought that I had died and gone to heaven. That's when I started programming in assembly language because if you used Fortran, you ran out of memory after about 100 statements.

Looking back, I think I got some really valuable experience from that time. We really had to do a lot with that 4 or 8k. So I think I'm really from another generation of programmers, where the discipline of efficiency and the use of assembly language was really important. I think that working in an 8k environment really prepared me for the time when a lot of people were saying that you couldn't do integrated software in just 64k.

How did you first get involved with Apple Computer?
One morning I ran into one of my neighbors, Don Williams, who was an Apple employee. He knew that I had a terminal to an IBM mainframe at home and he told me that he thought I should stop fooling around with mainframes and write something serious for Apple. At the time I really didn't think that you could do much with micro-computers.

In the summer of 1981, he took me to see Mike Markula, who was then Chairman of the Board at Apple. Mike had written a program in BASIC called "Small Job," an easy-to-use database designed for managers. He had taken the program as far as he could in BASIC and wanted me to finish the project. And he said that if I did this, that Apple would publish it. So I rewrote it in Pascal and brought it back to Mike. He said it looked good, and then proceeded to tell me what the rest of the features should be.

The result was published in the Spring of 1982 as QuickFile for the Apple III and then three months later for the brand new Apple IIe.

By December of 1982, I had rewritten QuickFile in assembly just to make the program faster. Assembly was clearly the language that I wanted to work with from there on, because it was faster and easier for me as a programmer. I also started working on a word processor just because it seemed like the next thing to do. About this time I also got my fist look at the Lisa Office System and I really thought that the idea of integration was a good one. I had a database and a word processor, so all that I needed to write was a spreadsheet. It also helped that a lot of people at Apple said that you couldn't do integrated software on an Apple II...I liked the challenge.

How did you decide on the features to include and how did you get the idea for the file card interface?
The AppleWorks team felt that the three most important pieces of software that anyone could have were a word processor, database, and spreadsheet (although I didn't know in what order). In terms of more detailed design, that direction came from Apple, and in particular from Don Field and Kelly Stirn. They were the ones who were always saying, "We really need *this*." And sometimes I would say, "Well *that's* great, but it'll take the rest of my life." And sometimes features just sneaked in.

The ideas for the file folders came one day when we saw a piece of software on an Apple III that used file folders...it was somewhat like the Mac Finder. And I said, "I can do that." So one day it just showed up in the code. At the time I thought that it was just a little frill, but the product testers really liked it. At this time it all became a standard Apple project with different people giving input on various features.

How did you feel when the product finally shipped in 1984?
I was really happy with the professional introduction and all the attention that the product got. It was really exciting to see AppleWorks take off and to see monthly sales figures with some digits in them. I had felt that the product would be a success because such a large number of people at Apple liked it and were using it. I think it was especially helpful to have the Apple field people as beta testers because they had used the product a lot; they knew how to answer dealer questions when the product finally came out. It was also great not to be working twelve hours a day, seven days a week anymore.

What do you like best about AppleWorks?
As a user, the things I like are: 1) The file card interface. I think that it makes AppleWorks very different from other products and also makes it very easy to use. 2) The consistency of commands among applications. Apple made me do this -- as a programmer I hated it, but as a user I love it. 3) I like the database best of all the applications, especially the quick sorting and printing reports to the screen. I always like to find ways to make things run faster.

What are your thoughts and hopes for the future of the Apple II?
I expect that engineers will continue to write good software for the Apple II and that some Macintosh software developers will port some of their products over to the IIGS. During the six years that I have been involved with the Apple II, there has always been at least one voice saying that the Apple II won't last for another year. I think the Apple II has a great future.

Tips & Tricks

Tips & Tricks & Tips & Tricks

Two ways of Using Extra Database Categories

We're always finding new reasons for keeping extra categories in your database; many articles from previous issues have discussed tricks for using extra categories. In this issue, we have two more.

The first trick is to use extra categories as a way of entering any message onto a labels-style report. Normally, AppleWorks database reports do not let you have any information in them other than the categories themselves.

But suppose you want to send confidential information to members of your organization and you want to print the word "Confidential" on each mailing label as shown in Figure 1. Since AppleWorks does not let you type onto the labels report format, you have to use extra categories to hold the information you want.

We'll assume that you already have a few extra categories in your database that are empty. (For details about adding extra categories to an existing database, see E.R. issues 1-5, page 32 and 2-4, page 44.) Simply place one of the extra categories into view in the multiple record layout screen in the database. If the category is not normally showing on that display, use the Open Apple - L command to tempo-rarily re-organize the layout of the categories. The screen should look like Figure 2.

```
        CONFIDENTIAL
Bob Jones
48 Lemon Street #10
Los Angeles, CA  91001
```

Figure 1: Mailing label with special message.

Type the desired information you want printed into the empty category of the first record and press Return. Now use the Ditto command (Open Apple - ') to automatically enter the same information into the rest of the categories in the database. By holding down the ditto command, this will happen quite fast.

You've probably guessed the rest already. Just include this extra category in the labels report format that you design. The information will appear on each label.

To quickly remove the information in the extra category (clearing it for next time), just move to the extra category of the first record again and press Open Apple - Y and Return. Now use the ditto command again to copy the "emptiness" into the remainder of the records.

```
File: Database          REVIEW/ADD/CHANGE          Escape: Main Menu

Selection: All records

Extra    Name          Street        City        State
-        Bob Jones     398 Euclid    San Diego   CA
-        Harvy Smith   2899 First    San Diego   CA
-        Sally Ingram  2 Orange      San Diego   CA

Type entry or use ? commands                          ?-? for Help
```

Figure 2: Database with extra category ready for entering information.

The next trick is like the first, but it applies to tables reports. In a tables report, you can use the extra categories to hold various types of messages or headings. Just type the message using consecutive records as shown in Figure 3.

Place the extra category containing the message on the leftmost side of the printout. By inserting blank records in strategic locations with the Open Apple - I command, you can create the desired look; Figure 4 shows an example.

File: Database REVIEW/ADD/CHANGE Escape: Main Menu

Selection: All records

Extra	Name	Street	City	State
CONFIDENTIAL	Bob Jones	398 Euclid	San Diego	CA
CONFIDENTIAL	Harvy Smith	2899 First	San Diego	CA
CONFIDENTIAL	Fred Tayler	88 Green	San Diego	CA
CONFIDENTIAL	Lucy Licki	8989 Old Mill	Los Angeles	CA
CONFIDENTIAL	Arnie Davis	55 Lower Johns	San Diego	CA
CONFIDENTIAL	Sally Ingram	2 Orange	San Diego	CA

mmands ?-? for Help

Figure 3: Using extra categories to hold messages in tables-style reports. Enter the message in the multiple record layout by moving the extra category into view. Include this category in the report layout.

File: Database
Report: TABLE

Extra	Name	Street	City
THIS GROUP	Bob Jones	398 Euclid	San Diego
IS IN SECTION	Harvy Smith	2899 First	San Diego
A-155	Fred Tayler	88 Green	San Diego
	Lucy Licki	8989 Old Mill	Los Angeles
THE FOLLOWING	Arnie Davis	55 Lower John	San Diego
ARE KEY	Bob Jones	398 Euclid	San Diego
CUSTOMERS	Harvy Smith	2899 First	San Diego
	Fred Tayler	88 Green	San Diego
	Lucy Licki	8989 Old Mill	Los Angeles
	Arnie Davis	55 Lower John	San Diego
THIS GROUP	Steve Smith	398 Euclid	San Diego
IS IN SECTION	Gary Lee	2899 First	San Diego
B-101	Erin Toolie	88 Green	San Diego
	Aron Katris	8989 Old Mill	Los Angeles
THIS GROUP	Donna Hastie	55 Lower John	San Diego
IS IN SECTION	Melba Jones	398 Euclid	San Diego
G-101	Gale Van Land	2899 First	San Diego
	Jessie Vargas	88 Green	San Diego
	Flim Johnson	8989 Old Mill	Los Angeles
	Pat Methaney	55 Lower John	San Diego
DUPLICATES	Sally Ingram	2 Orange	San Diego
	Sally Ingram	2 Orange	San Diego

Figure 4: Example of using messages and headings along with empty records to improve the looks of your tables reports. Empty records appear between groups to allow space in the report. These changes can be temporary.

Trick for Moving Formulas Between Spreadsheets Without ERRORs

The idea for this trick was suggested by Phillip H Mayer, a subscriber in Oak Brook, Illinois. This trick uses a technique described in earlier issues, but we'll repeat the process here so nobody is left out.

AppleWorks is not capable of linking spreadsheets together through formulas. Moreover, when copying formulas between spreadsheets, if the formulas contain references to other cells, they must be able to reproduce their values using information in the new spreadsheet. For this reason, you usually have to copy the desired cells, plus all cells referenced by those cells. Most often, that's not desirable. It should be easy to copy a few cells between spreadsheets, whether those cells contain formulas or straight values.

If you copy a formula to another spreadsheet using the clipboard, and that formula is unable to find appropriate data in any cells referenced by the formula, you'll get an ERROR or, even worse, an incorrect value.

You can see this problem by typing a simple formula into a new spreadsheet. Make the formula reference another row; for example, you might enter this in cell A1:

+A5*3

Now copy row A to the clipboard and move it to a new spreadsheet by copying from the clipboard. Since cell A5 in the new spreadsheet is empty, you get the wrong value calculated by the formula. What's worse, if you copy the information into an existing spreadsheet, cell A5 might contain some other, inappropriate number that's used for something else.

Here's a solution. Take all the values that you want to copy to another spreadsheet and make them appear in one row (we'll use row 10) by entering formulas in the row that access the values. The row should be clear of all data except formulas that access the values you want moved. Use

the following format for the formulas in this row:

A10: @IF(A1=1,G5,A10)

Let's examine this formula. First, it appears in cell A10 (which is the row that we're going to move to the other spreadsheet). It uses the IF statement to determine whether or not there is a "1" in cell A1. If so, then it gets the value in cell G5 (cell G5 can be a reference to any cell in the spreadsheet, including cells containing complex formulas). If the value in A1 is not a "1" then the formula references itself, A10.

Start with the value of cell A1 as a "1" and calculate the worksheet. The formulas in row 10 will access the appropriate values throughout the spreadsheet. Now, change A1 to something other than 1 and copy row 10 to the clipboard.

We're now going to move this row into row 10 of the other spreadsheet. This will be an existing spreadsheet that uses the data we're importing. Prior to the transfer, we set up the destination spreadsheet so that row 8 contained formulas that access the values in row 10 (which remains empty until the transfer). For example, cell A8 would contain this formula:

@SUM(A9...A10)

Cell B8 would contain this:

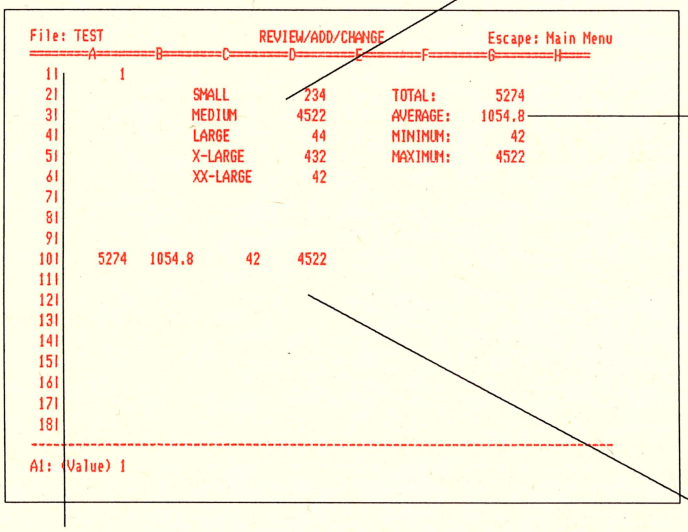
@SUM(B9...B10)

Of course, until we actually transfer the row from the old spreadsheet, row 10 in the new spreadsheet is empty.

As you might know, copying information from the clipboard into a spreadsheet causes all data below the transfer point to "bump down" so that the new data will fit. This displaces your data. However, the formulas in row 8 are designed to expand and include displaced data when you copy the row into row 10 of the new spreadsheet.

Because row 8 is above all the displaced information, other cells in the new spreadsheet that access row 8 will not be affected by the transfer. And since cell A1 of the new spreadsheet does not contain a "1" the data in row 10 remains the same -- allowing for a perfect transfer. Figure 1 shows an example of two spreadsheets used in this transfer.

This is a simple worksheet showing quantities of certain products.

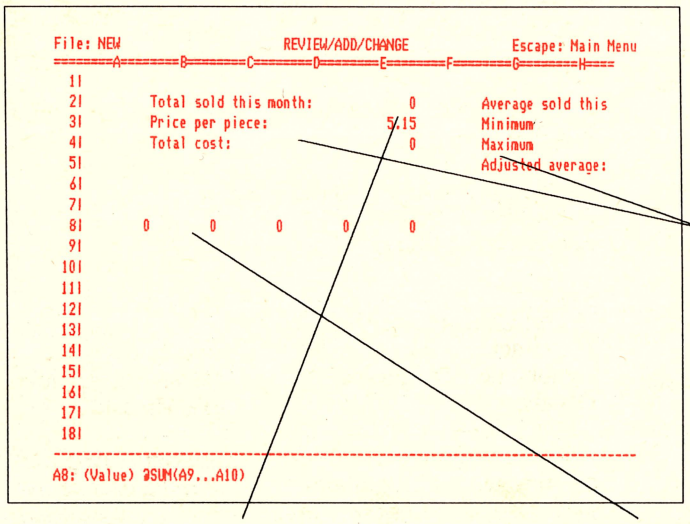


This section calculates various amounts based on the information in column D.

Notice that cell A1 contains the number 1.

These cells contain the special formulas that test for a 1 in cell A1 and access the calculations in column G.

A10 @IF(A1=1,G2,A10)
B10 @IF(A1=1,G3,B10)
C10 @IF(A1=1,G4,C10)
D10 @IF(A1=1,G5,D10)


File: NEW
REVIEW/ADD/CHANGE
Escape: Main Menu
A B C D E F G H
2 Total sold this month: 0 Average sold this
3 Price per piece: 5.15 Minimum
4 Total cost: 0 Maximum
5 Adjusted average:
8 0 0 0 0 0
A8: (Value) @SUM(A9...A10)

This data uses the information from the old worksheet to perform various statistical calculations for sales.

Cell E2 contains a simple reference to cell A8. This will contain data when the information is tranferred from the old spreadsheet.

Cells in row 8 contain formulas that sum the data being transfered:

A8 @SUM(A9...A10)
B8 @SUM(B9...B10)
C8 @SUM(C9...C10)
D8 @SUM(D9...D10)

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SPECIAL

Disk&Newsletter Combinations

Exclusive Reference often came disk versions of the articles and tips discussed each issue. Often, the disk versions make duplicating the techniques in the article a lot easier. Not all issues have the accompanying disk -- only those which have applications that would benefit from the extra help.

Disk versions of the files are always available to subscribers for $5. If you don't already have the issue, you can order any individual back issue for $4 per copy. Following is a list of all current disks and the issues that they accompany.

Disk #1
Issues 1-1 through 1-11

This is a two-sided disk for $10 that was recently compiled from the first eleven issues of E.R. It includes a billing and estimating system for graphic arts businesses, a two-part system for medical offices, a simple teacher gradebook for student records, a simple graph in the spreadsheet using graphing techniques, formulas for *and/or* logic in the spreadsheet (without version 2.0), some macros, and more.

Disk #2
Issue 1-12

This issue describes how to set up a small billing system in the AppleWorks spreadsheet and print the bills. It shows how to automate the task with macros so you have a self-working billing system. The disk contains the sample worksheet and the macro files.

Disk #3
Issue 2-2

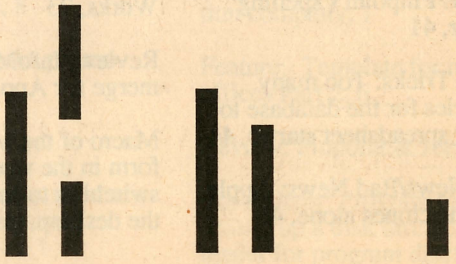
This issue contains several tools including a multi-purpose numbering system for calculations, a description of setting up multi-level table lookups in the spreadsheet, and a worksheet for determining expected outcome. The disk contains the examples of all the techniques.

Disk #4
Issue 2-2 Bonus Item

This disk contains character compilations for easy banner printing right from AppleWorks. Due to the great response to this disk, more character sets have been added to the original disk and it's now avail-able to non-subscribers for $11.95. However, subscribers can still get it for the original $5. By combining the characters to make words and phrases, you can easily print huge banners right from within AppleWorks.

Disk #5
Issue 2-3

Issue 2-3 reviews the best templates in the public domain library of The AppleWorks User Group. This disk includes most of the templates reviewed in a kind of "best of" volume. It also contains an estimating system for photography businesses (useful for many professions), a loan calculator, and macros that create menus using Super MacroWorks.



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Arranged Alphabetically
by Topic. Includes Main Menu
and Exclusive Reference

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Bulk copies of any back issue can be ordered for educational purposes by schools, corporations, user groups, and consultants. These are available for the price of one back issue plus $3 for shipping and handling.

To order, send a written request on your organization's letterhead describing how you will use the issues. Also indicate the preferred issue to be sent and two alternates. Bulk issues are available for Exclusive Reference and Main Menu. We can also send bulk copies of this Index and our catalog of AppleWorks tools upon request. Shipment is subject to approval.

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Letters

Safely Saving Large Files

I am wrestling with a lengthy document. My writing style is to get the story down, warts, errors, and all, and then go back and revise, revise, revise. AppleWorks insists that the file cannot be saved unless there is enough space on the disk to hold the desktop file and the original file. An "escape hatch" on my 2.0 version asks if I want to delete the old file before saving the desktop file. I hesitate to do this because we have electric failure here often enough to advise caution.

I tried breaking up the file into smaller units -- five on each disk. But with five files to a disk, the search and replace functions must be done over and over. Plus, edited files tend to grow longer, and I'll end up with little room left on the disks anyway.

I know that I could upgrade my disk capacity and memory, but I prefer not to put more money into the equipment right now. Can someone offer me an alternative which is more efficient?

Stewart H Vance
McLean, Virginia

AppleWorks does, in fact, require enough extra space on the disk to hold the original copy of a file plus another copy -- even if you are writing over the original. This is because AppleWorks does not over-write the original, but leaves it on the disk as a second file until the new version is safely saved onto the disk. It then removes the original.

You are correct that the "escape hatch" feature you described in version 2.0 can be dangerous in the case of a power failure. If you choose this option for saving, AppleWorks will write over the original; if a power failure occurs during the save, you'll end up with neither the original nor the new version of the file.

I have two suggestions. One is to back up your files before you edit them and then go ahead and use the "escape hatch" option. If an outage occurs, you'll be no worse off than you would have been without using the option. You are going to lose the new edits in the event of an outage, no matter what.

The other suggestion is to leave the files as large as possible and keep a few blank formatted disks handy. If there is not enough room to save the file onto the same disk, save it to one of the blank disks and recycle the original disk.

Switching Systems Without Rebooting

We do our bookkeeping with Manzanita's BusinessWorks General Ledger System. With BusinessWorks, you can go directly to AppleWorks through the Quit option without re-booting. Is there any way to patch AppleWorks so we can go from AppleWorks to Business-Works without rebooting?

Karen McKinsey
Omaha, Nebraska

There is no need to patch Apple-Works to allow you to start a new program without rebooting. Just purchase any recent program from Beagle Bros or the Software Touch and copy the PRODOS.SYSTEM file from their disk to your AppleWorks Startup disk, replacing the PRODOS.SYSTEM file that's already there.

Beagle Bros and the Software Touch have patched versions of ProDOS that contain a feature known as *Bird's Better Bye*. The feature lets you select and run any system file after quitting your AppleWorks program (or any other program).

Bird's Better Bye has been reviewed in past issues, so check the *Index to Back Issues* for more details.

Version 2.0 Required?

Four years ago I purchased Appleworks to be used on the Apple IIe with a Panasonic printer. There were too many problems getting the printer to work, so I sold it. Now, with my new Imagewriter II, I am not able to use this version of AppleWorks. The Apple people here have told me that I need an updated version of AppleWorks, they used a more recent version and everything worked fine. I would like to know how to get a more recent version so I can use my Imagewriter II. I would also like to know if you think this is really the problem.

Carol Eileen Jay
Mexico

We've used our Imagewriter II printer with all versions of AppleWorks. There is no reason why yours won't work properly. However, without knowing the specific problems or the version you are using, it's difficult to

tell. Version 1.0 of AppleWorks did have some printer bugs.

All upgrades except the recent 2.0 upgrade were free from your Apple dealer. Just take your old version in and the dealer should be able to copy the 1.2 or 1.3 version onto it. If you cannot find a dealer with these versions, check with your local Apple user group.

The new 2.0 version was sold by Apple for $50 and cannot be copied by your dealer or user group member for this purpose. Supposedly, Apple has discontinued the upgrade offer for $50, but since all software responsibilities are now part of the new Claris Corporation (an Apple subsidiary), who knows what will happen to the upgrade offer?

The End of the Line

I have been reading E.R. for about a year; I really enjoy your publication. I would like to save AppleWorks files in a standard ASCII text file without a line feed at the end of the line. The only way I can see to save AppleWorks files as ASCII files is to print to an ASCII file on disk, but when AppleWorks prints these files, it adds a line feed at the end of each line. Any suggestions or enhancements that would help me?

With your influence to the author of AppleWorks, please suggest that AppleWorks be able to save to ASCII under the save file options without adding line feeds.

John Kidney
Webster City, Iowa

We like to think that Bob Lissner anxiously awaits his issues of the Journal each month, waiting to discover the problems users are having with his program. But I think the word "influence" might be stretching things. I don't remember getting a call from him asking my opinion about line feeds in ASCII files.

Funny thing...Bob added this "feature" of placing carriage returns at the end of each line in ASCII files into the new version 2.0 of AppleWorks. For most people this is a benefit -- since the carriage returns are desired for most data transfer between the AppleWorks modules.

However, people communicating to the outside world, like you, have it tough. There is no way to avoid the insertion of these carriage returns in ASCII files in version 2.0, neither by printing to ASCII nor by printing to disk, no matter how you set up a disk printer.

So I recommend keeping an older version of AppleWorks handy for these tasks (technically known as 'downgrading'). Using pre-2.0 versions you can print using the handy *to a text (ASCII) file on disk* option directly from the word processor and you will not get the carriage returns. In fact, with pre-2.0 versions, you have to go out of your way when you *want* the carriage returns. Specifically, you have to set up a disk printer using either the *Apple Silentype* printer or the *Custom* printer in the printer list -- then print to disk. Only these two disk printers will automatically add the returns after each line.

This Page, That Page, Whatever

In the AppleWorks word processor, when I want to print from This page or Cursor I usually get several lines from the preceding page or point from which I want to print. Why won't it select more accurately and is there anything I can do to make it more predictable?

Also, With my Imagewriter, I received a demo disk which contained some fonts for superscript and subscript. I understand that these fonts can be downloaded into the printer and will be printed when the script options are selected. Is that a correct understanding and are there other fonts that can be downloaded into the printer that would work with AppleWorks?

Arliene Adams
Eugene, Oregon

I know of only a few reasons why AppleWorks would improperly calculate lines on the page and they all have to do with substituting codes for printer functions using a custom printer setup. Most likely, you would know if you've done this. Basically, if you use any of the Characters per Inch or Lines per Inch settings for something other than they were intended, you might have the problems you described. If any of our readers know more about this problem, write in at the address on the back page.

As for the second question: I did not receive the same disk with my Imagewriter so I can only guess at what the demo program is doing. Most likely, they are providing a new font containing special versions of all ASCII characters for use with superscript and subscript. They might also provide a routine that also downloads the fonts for you.

Downloaded fonts will be substituted for normal characters when activated with this special code: *Escape '*. You can also return to the normal characters with this special code: *Escape $*. The font will remain in the printer's memory until you turn the printer off. To use the font within AppleWorks, you must surround the desired text with these special printer codes; the surrounded text will be printed in the special font.

But you don't just type the codes into the word processor. You must set up a custom printer and

Continued on page 14.

Review

New AppleWorks Tools From Beagle Bros

Introducing the Time-Out Series of AppleWorks Enhancements

Beagle Bros recently ran an ad in a major Apple II magazine claiming that at the AppleFest show in September, they would make software history with a line of enhancements that would be the "most advanced, most powerful, fastest, and easiest to use AppleWorks enhancements you've ever seen."

That's some claim. It's no secret that Beagle has been working on AppleWorks enhancements and that they recently joined with the Software Touch crew (actually, former Software Touch president Mark Simonsen purchased Beagle). But we decided that we couldn't wait until the show to see what these products were like. We managed to get copies of the products prior to the show and have a complete summary of them for you here. There are several new products in the line and we want to do a complete job of reviewing each one, so full reviews will appear in coming issues.

Time Out

Time Out is the name given to the host or manager of several Time Out applications. After Time Out is applied to your AppleWorks startup disk (i.e., patched), it will recognize and access all of your Time-Out-compatible applications up to as many as you can fit on one disk or in memory.

The host comes with every Time Out application at no extra cost and need be applied only once. So you're up and running with Time Out after purchasing your first application. All future applications that you purchase just need to be copied to the same disk as your other applications.

Does this sound familiar? The Pinpoint applications are much like this, except that Time Out applications work inside AppleWorks so that you never lose access to your AppleWorks commands and options. If desired, you can install not only the Time Out host, but any or all of the Time Out applications onto your AppleWorks program disk so they actually share AppleWorks desktop memory with AppleWorks. Of course, this is recommended for users with expanded systems.

To summarize, Time Out consists of a patch that enables you to access many applications. Applications can be installed as part of your AppleWorks program where they share memory with AppleWorks and run super-fast. Or they can be copied to a disk. Disks can include your AppleWorks startup disk (which has some room on it for your files) or even a RAM disk. Running the applications from a RAM disk is equally as fast as installing them in AppleWorks -- and requires less setup.

The initial Time Out installation is quite simple and painless. You simply specify the location of your accessories (which you can alter at any time) and in a few moments the AppleWorks startup disk is patched. You're now ready to choose your Applications and copy them to the specified location.

The Applications

Beagle will be releasing seven Time Out application disks at first. Each one contains the Time Out host, so you can get one or many.

Super Fonts

Super Fonts gives your AppleWorks word processor documents Macintosh-quality typestyles right from within AppleWorks. Like all Time Out applications, you never have to leave AppleWorks to begin using Super Fonts. Just select the desired font for any portion of your document; you can switch fonts as often as you like within the document. And you can apply several styles to each font, such as underlining, boldface, italics, outline print, reversed print, superscript, subscript, or any combination of these styles and fonts. Figure 1 shows some samples of these fonts and styles.

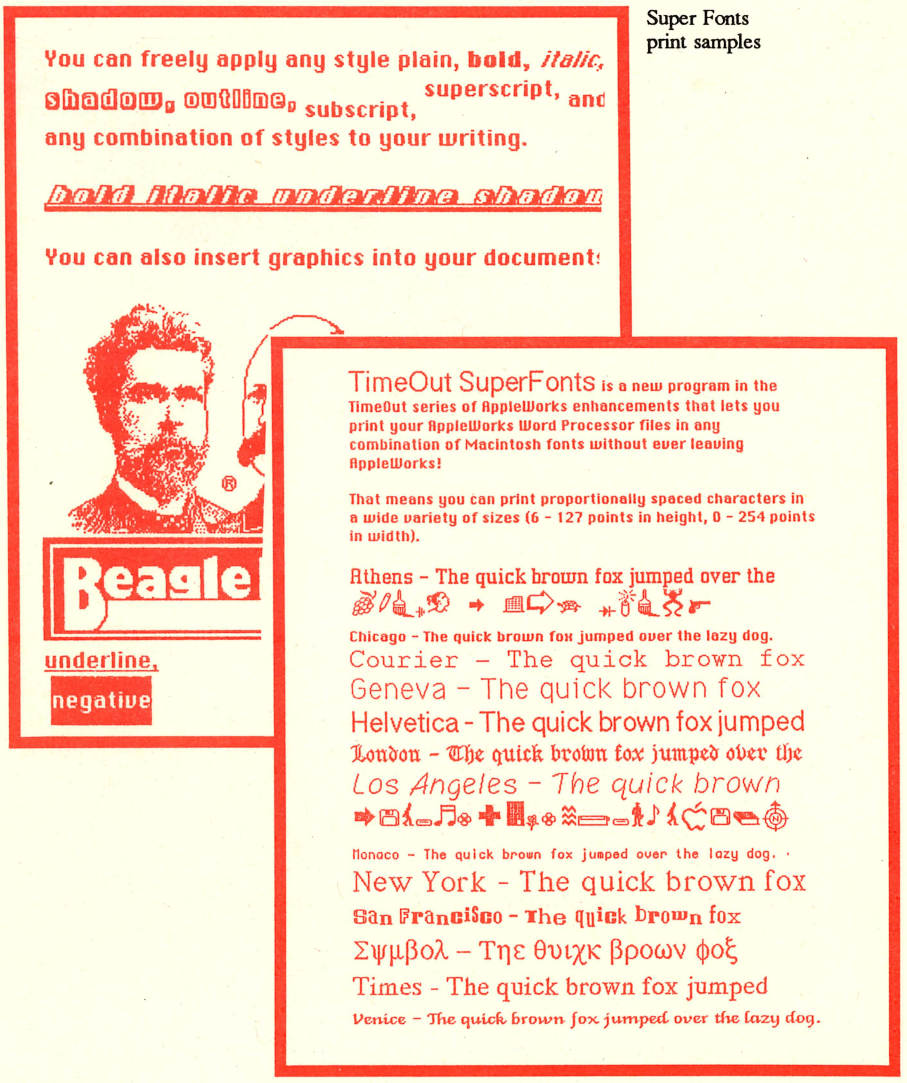
Each font comes with several type sizes -- from 6-point type to type that measures two-inches tall. And we can testify that the quality on an Imagewriter is equal to or better than a Macintosh printout.

Because you apply the fonts directly to an AppleWorks word processor document inside AppleWorks itself, you cannot

see on the screen what you will get on the printer; so Beagle included a screen preview command. This command lets you view the document -- with fonts -- on the screen before printing. This way you can make adjustments to the margins or page lengths as needed.

Super Fonts does not allow multi-column printing, but does let you add graphics to your word processor documents. These graphics can be any double hi-res image, including Print Shop and News Room graphics but they will not appear on the screen except in preview mode.

Finally, Super Fonts gives you a 50% reduction feature that automatically shrinks your document 50% on the printer. Super Fonts has a list price of $79.95.


You can freely apply any style plain, bold, italic, shadow, outline, subscript, superscript, and any combination of styles to your writing.
bold italic underline shadow
You can also insert graphics into your document:
Beagle
underline,
negative
TimeOut SuperFonts is a new program in the TimeOut series of AppleWorks enhancements that lets you print your AppleWorks Word Processor files in any combination of Macintosh fonts without ever leaving AppleWorks!
That means you can print proportionally spaced characters in a wide variety of sizes (6 - 127 points in height, 0 - 254 points in width).
Athens - The quick brown fox jumped over the
Chicago - The quick brown fox jumped over the lazy dog.
Courier - The quick brown fox
Geneva - The quick brown fox
Helvetica - The quick brown fox jumped
London - The quick brown fox jumped over the
Los Angeles - The quick brown
Monaco - The quick brown fox jumped over the lazy dog.
New York - The quick brown fox
San Francisco - The quick brown fox
Σψμβολ – Τηε θυιχκ βροων φοξ
Times - The quick brown fox jumped
Venice - The quick brown fox jumped over the lazy dog.
Super Fonts print samples

Quickspell

Quickspell is the Time Out spelling checker. It works inside AppleWorks word processor documents to correct spelling errors. Quickspell will check a 14 page AppleWorks document in about 20 seconds. It uses three dictionaries: an internal dictionary that checks most common words quickly, a main dictionary containing 80,000 words, and a custom dictionary to which you can add words of your own. The custom dictionary can contain an unlimited number of custom words (depending on disk size and memory).

Features include the ability to display words in context, remove words that appear twice in a row, and suggest alternative spellings. The custom dictionary is a standard ASCII file, so you can edit it if desired. It has the ability to store misspelled words in memory for faster checking and it highlights misspelled words in the document. Quickspell has a suggested list price of $69.95.

Sidespread

This application prints your AppleWorks spreadsheets sideways. It works from within the spreadsheet and gives you the option of reducing the printout by 50%. It gives you a variety of fonts and type sizes and maintains all of your AppleWorks print options in the document.

Spreadsheets can be any length and Sidespread tells you how many lines are available for your established paper and how many are being used by the current document selected. Sidespread lists for $49.95.

File Master

File Master is a utility program that lets you format disks, create subdirectories, set subdirectories in AppleWorks menus, copy disks, convert file types, rename files and disks, display up to 100 files on the screen at once and more.

File Master has file selection rules (like record selection rules in AppleWorks database) that let you choose files matching certain criteria. File Master lists for $49.95.

Desk Tools

This is a collection of accessories that can be accessed from within AppleWorks. Accessories include a calculator, notepad, phone dialer, envelope addresser, clock, and puzzle. A calendar accessory lets you schedule appointments and tasks, and a clipboard converter lets you quickly convert any information on the AppleWorks clipboard from word processor, database, or spreadsheet format

to word processor, database, or spreadsheet format. This will often avoid the need to print to disk, ASCII files, or DIF files when moving information between the modules in AppleWorks.

Another accessory encrypts your AppleWorks files so they cannot be read by anyone who does not know the special code you've entered (i.e., file security). And another accessory gives you a document preview for word processor documents. Unlike the screen preview mode in Super Fonts, this document preview lets you see three pages of your document on the screen at once in a reduced version. This is handy for getting an overall feel for how the document will look on paper. If your documents access Super Fonts, this accessory will display the documents including fonts and graphics. List price is $79.95.

Ultra Macros

This is Randy Brandt's latest macro program, replacing MacroWorks and Super MacroWorks. Ultra Macros takes Super MacroWorks and adds more logic features, including more powerful IF/THEN/ELSE logic, the ability to store variables in macros, access to programming statements like PEEKs and POKEs, macros that are accessed by the clock (i.e., delayed access), and more.

Although Ultra Macros promises to be more powerful than Super MacroWorks, it's unfortunate that Super MacroWorks macros cannot always be converted to Ultra Macros format without some re-typing of commands. Simple macros that do not access IF/THEN/ELSE logic will probably run without problems, but more complex macros will require re-writing.

Ultra Macros will come with a disk of sample macros and Super MacroWorks owners can upgrade for a small fee.

The best thing about Ultra Macros is that they can be used to control all of the Time Out applications in addition to AppleWorks itself. The possibilities are endless.

We were successful in getting Super MacroWorks to access Time Out applications although Beagle does not suggest this as an option, perhaps because Time Out will not display Super MacroWorks in its application menu. List price is $59.95.

Graph

Time Out Graph is a spreadsheet graphing program for AppleWorks. If you've seen Visualizer IIe from PBI Software (or read our review of it in Exclusive Reference issue 2-1), then you already know what this application does. The difference is that Time Out Graph works right inside your AppleWorks spreadsheet.

Graph provides seven types of graphs for your AppleWorks data, including pie, line, XY, bar, stacked bar, and high/low graphs.

Bar graphs include automatic or manual scaling of the Y-axis and the ability to select up to six data ranges with six different patterns for each, the ability to graph an unlimited number of points (e.g., you can compare sales of up to six different products for an unlimited number of months).

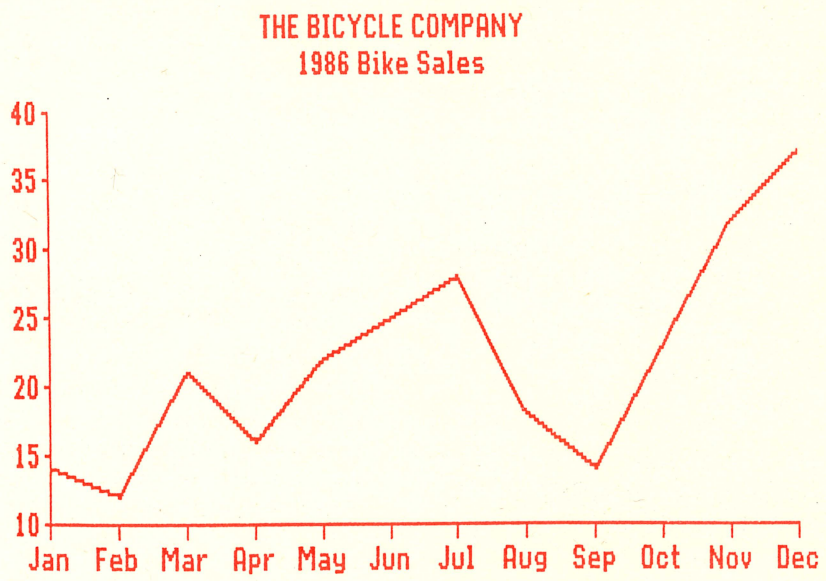
Pie charts can be drawn with up to 16 patterns for the slices, and slices can be pulled away from the pie.

Graphs also let you enter titles and legends and re-graph your data using different graph types. All graphs can be stored as standard double hi-res picture files and can be used with other products, such as Print Shop. Using Super Fonts, you can include these graphs in your AppleWorks word processor documents.

Graphs do not access color on the screen nor do they print in color. Beagle might create a version for the Apple IIGS that will have color capabilities. Graphs lists for $89.95.

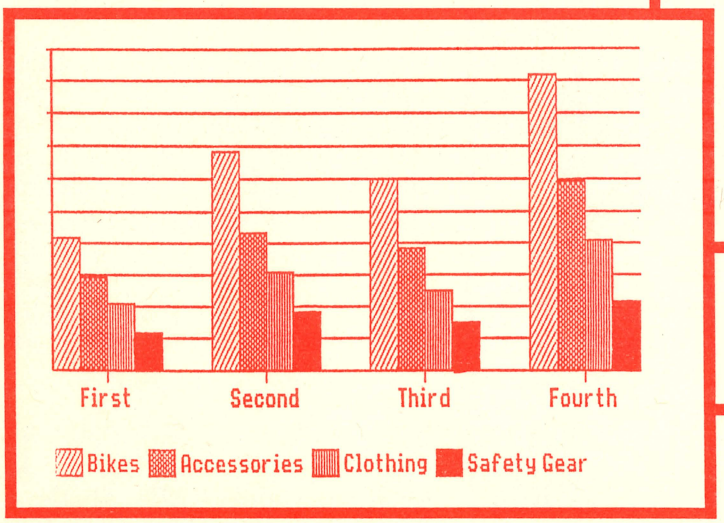
Summary

This all sounds too good to be true for serious AppleWorks users. Undeniably, Beagle programmers have done their homework; they've studied their competition and matched it or improved on it. The fact is, if Beagle's applications are only as good as their competition's they've got the edge because of their AppleWorks integration.

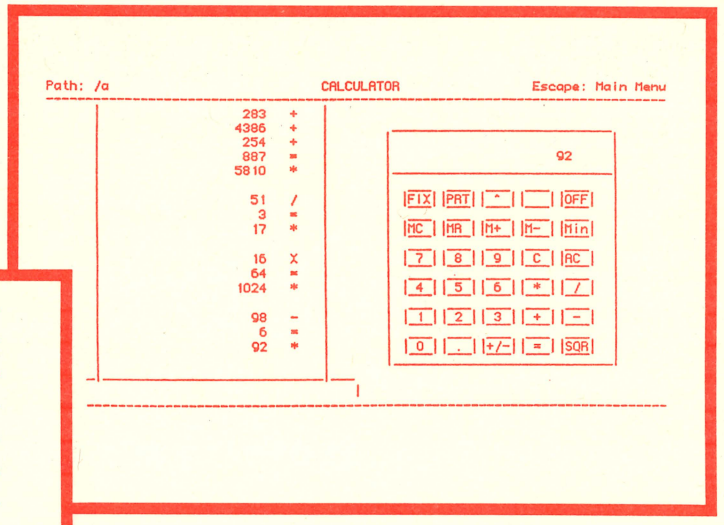


But Beagle has proved themselves in the past and, most likely, they'll produce the kind of products that live up to their claims.

In coming issues, we'll provide detailed reviews of these products, comparing them to other products on the market when appropriate. Time Out and the first seven applications will begin shipping at the AppleFest show in September.



Example of Time Out Graph



Example of Desktools

Letters

Continued from page 10...

substitute these codes for two other printer funtions. I would recommend using the codes for underlining.

For example, you can enter

Escape '

in the place reserved for Underline Begin and

Escape $

in the place reserved for Underline End. Then you would use the printer options UB and UE to activate and de-activate the special font in the word processor document.

There are plenty of special fonts available for the Imagewriter and other printers and programs that download them for you. But to use any downloaded font within AppleWorks requires the substitution of codes as described here. See back issue 1-7 of Exclusive Reference for details about custom printer setup and substituting codes.

Two font downloading programs (including fonts) are Power Print from Beagle Bros and Print Quick from Third Wave Technologies. Both programs come with instructions on using fonts with AppleWorks.

Beagle Bros (619) 296-6400
Third Wave (216) 671-8991

"F" is for Fail

As a teacher, I have found the spreadsheet to be an excellent gradebook. It does a terrific job of keeping numeric averages as well as the school's quality point system. The problem is that I would like to convert a numeric average to a letter grade (e.g., 85 to a B). Is there any solution to this problem or must I convert the numeric average into a letter grade manually?

Len Winsky
S. Salem, New York

We've received this question a number of times -- it appears to be quite an issue for grading spreadsheets. Although there is no way of converting numbers to text using AppleWorks, there are two solutions I can suggest that involve add-on products.

Using Super MacroWorks, you can design a macro that would move to the cells containing the numbers you want converted to letter grades; it would read the contents of the cells and change them to letter grades using IF logic. This would work only if the numbers you are converting are fairly limited, such as converting a 1 to an A, a 2 to a B and so on. If your values are complex averages, change them to simple number grade equivalents using a table lookup.

A better solution is to use a program called ReportWorks from Megahaus Corp. ReportWorks has math functions that allow text mixed in with numbers. You could create a formula that entered a letter grade based on a certain range of scores. ReportWorks will read your AppleWorks spreadsheet and evaluate its information and print the final report card.

News

EXCITING NEWS this month concerns this newsletter. Sage Productions, Inc., of San Diego, California has purchased two AppleWorks newsletters and combined them into the new *AppleWorks Journal* which you are now reading.

Sage has retained the editorial staff from Exclusive Reference to produce each issue.

See the insert this month for information about back issues of the two publications. Use the certificate on the wrapper for 50% off.

THE APPLEWORKS JOURNAL staff will be at booth number 115 at the San Francisco AppleFest show. The show producers gave us hundreds of discount certificates for our subscribers, worth $5 off show admission or $10 off seminar admission. Call us if you're planning to be there and we'll send you a discount certificate. Call (619) 455-7513.

PESCHEL INSTRUMENTS introduces its "Stand-by Power Supply," a power backup system for microcomputers that supplies power to a system within three milliseconds of a power failure or sag. The company offers 400 and 800-watt models for $495 and $895 respectively.

Peschel Instruments
(813) 574-3164

Random

ROBERT ERICSON, author of AppleWorks Tips & Techniques, has produced a disk of files to accompany the examples in his book. The book is available in most bookstores and the disk is available by sending $12 to:

Robert Ericson
Box 16064
Rumford, RI 02916

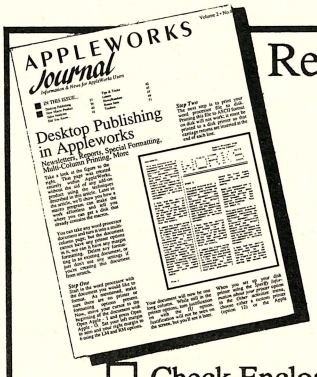
APPLE COMPUTER is said to be compiling information for another upgrade to AppleWorks. This 2.1 upgrade will consist mostly of bug-fixes in version 2.0, such as the problems it has when a huge amount of RAM is added and it's problems with the Control-@ string in the printer codes screens.

PINPOINT PUBLISHING is selling their InfoMerge mail merge product to user group members for only $15 plus $5 postage and handling. *Journal* subscribers probably qualify as user group members. Write to pinpoint.

Pinpoint Publishing
Box 13323
Oakland, CA 94661

JOURNAL SUBSCRIBER
Claude Boland would like to hear from AppleWorks users in the construction and contracting business to share information about AppleWorks. Write to him in care of us at:

Sage Productions
5677 Oberlin Drive
San Diego, CA 92121



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About the Journal

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To avoid confusion, we use a few conventions when referring to AppleWorks commands and options. Commands refer only to those keystrokes that include the Open Apple key and options refer to menu choices or choices listed at the bottom of the screen as the result of typing a command. Options are always listed in italics, as in:

...now print the file *to disk*.

Spreadsheet cells are shown along with the name of the cell, as in:

A1: +C34*5

Key presses that are not commands are capitalized, such as in Return, Escape, and Down Arrow. Macros are shown in the format of the macro language being used in the example. We use the term *category* in place of the more common term, *field* because the AppleWorks manual uses category.

Christopher Van Buren, Editor & Publisher
Michael J. Biancalana, Contributing Editor
Robert Netro, Contributing Editor
Trudy Totty, Editorial Assistant

Authors

Contributors to the AppleWorks Journal vary from issue to issue. Bylines accompany articles only occasionally.

Christopher Van Buren is author of several computer books, and co-author of AppleWorks Mastery. He contributes to many computer magazines, including Compute and A+.

Elizabeth Gebhardt is the former AppleWorks product manager for Apple Computer. She is an Apple employee and a freelance writer and photographer.

Steve High is a noted AppleWorks authority and co-author of AppleWorks Mastery. He is a contributor to A+ and other publications.

Bonus Item

Seldom Seen AppleWorks Messages

by Steve High

AppleWorks has the capacity to know if you've overstepped your limits with the program. And to inform you of your plight, it has several built-in error messages. Most of us see a few of these from time to time. Some of them, however, are seldom seen.

How often you see an AppleWorks message depends, of course, on how often you evoke it by a particular action.

Here's one that I used to see quite often:

> Desktop full. You should save, and must remove, [name] before you can work with any other file.

With the availability of desktop expansion, though, that message is not as common as it used to be.

To see this next one (and to understand why it appears), create a short word processor document called

APLWORKS.SYSTEM

Now try to save it to your AppleWorks startup disk. You get the message:

> The old file is not an AppleWorks file. As a precaution, you are not being given the chance to destroy it.

APLWORKS.SYSTEM is the name of one of the files that makes AppleWorks run. If you could save a word processor file over it, your AppleWorks disk would be history.

Actually, if you really want to ruin your AppleWorks disk, you can do it. Instead of saving your ill-named word processor file, you can print it to disk as an ASCII text file. AppleWorks will, in this case, warn you that a file of the same name exists on the disk, but then you can write over it. I guess AppleWorks feels that if you can type the pathname correctly, you're old enough to trash your startup disk if you want to.

Many of the more obscure AppleWorks messages pertain to the program's limits, at both ends. For instance, one that I find a little spooky appears when you try to move or copy to the clipboard below the last line of a word processor document. The screen immediately blacks out, then declares:

> This command can only be done within the text of the document.

Another message prompted by too little information is this one from the spreadsheet:

> The arrange feature needs at least two rows to work with.

Here's a notorious AppleWorks spreadsheet message:

> Some information was lost from cell [coordinates].

That one comes from pushing the spreadsheet a lot harder than it can take. It's less likely to occur with AppleWorks 2.0 if you have expanded memory.

Here's an equivalent message in the database that occurs when the desktop overflows:

> Some information was lost from record [number].

Another message appears when you try to insert more rows or columns into a spreadsheet than the spreadsheet will handle:

> There isn't room to move aside the existing entries.

And if you're pushing AppleWorks hard enough to see the following message, you might consider learning more about subdirectories or purchasing the File Master program reviewed this isue:

> AppleWorks will list only the first 130 files on this disk.

If you'd like to edit some of these AppleWorks messages, common or uncommon, you might want to purchase ProByter from Beagle Bros. This utility lets you change AppleWorks messages to suit your own taste.

Beagle Bros
3990 Old Town Ave. #102
San Diego, CA 92110

Correction: A previous issue called this program GPLE. ProByter is the correct program to order for this function.